

**CLAIMS**

We claim:

1           1.    A method comprising:  
2            defining a new pixel type for the purpose of image  
3   processing;  
4            updating codecs to support handling of images formatted in  
5   said new pixel type;  
6            converting an image stored in a given file type into data  
7   formatted in said new pixel type; and  
8            processing said data formatted in said new pixel type using  
9   standard image processing routines, said new pixel type closely  
10   correlated to said given file type, said new pixel type  
11   containing all the components of pixels of said given file type,  
12   said standard routines designed for a color space different than  
13   that of said given file type and said new pixel type.

1           2.    A method according to claim 1 further comprising:  
2            enabling a user to select white levels and super-white  
3   levels in said new pixel type.

1           3.    A method according to claim 1 wherein said new pixel  
2   type is ordered with the Alpha channel first, followed by the Y  
3   channel second, followed by the Cb channel third, and the Cr  
4   channel fourth, said converting including re-ordering of said

5 data in given file type to match the order of said new pixel  
6 type.

1 4. A method according to claim 3 wherein said defining  
2 includes:  
3 providing for the Alpha channel to range from 0 to 255.

1 5. A method according to claim 3 wherein said defining  
2 includes:  
3 utilizing of said Y channel such that black corresponds to a  
4 Y value of 0.

1 6. A method according to claim 4 wherein said converting  
2 includes:  
3 if said Alpha channel was present in said given file type,  
4 then merely extending the range of said Alpha channel to  
5 correspond to the new pixel type definition; and  
6 if said Alpha channel was not present in said given file  
7 type, then filling in Alpha values for the Alpha channel.

1 7. A method according to claim 5 wherein said converting  
2 includes:  
3 subtracting a fixed offset value from the Y channel of data  
4 in said given file type.

1        8.    A method according to claim 3 wherein said defining  
2 includes:  
3        providing for the Alpha channel to range from 0 to 255; and  
4        utilizing of said Y channel such that black corresponds to a  
5 Y value of 0.

1        9.    A method according to claim 8 wherein said converting  
2 includes:  
3        if said Alpha channel was present in said given file type,  
4 then merely extending the range of said Alpha channel to  
5 correspond to the new pixel type definition; and  
6        if said Alpha channel was not present in said given file  
7 type, then filling in Alpha values for the Alpha channel; and  
8        subtracting a fixed offset value from the Y channel of data  
9 in said given file type.

1        10.   A method according to claim 1 wherein said given file  
2 type has pixels of type v408, and said standard image processing  
3 routines were designed for RGB data.

1        11.   A method according to claim 10 further wherein said  
2 processing is confined to routines that are not color space  
3 specific.

1        12. A method for processing an image of a given file type  
2 comprising:

3        converting said image into data formatted for a new pixel  
4 type, said new pixel type closely correlated with and having all  
5 the components of pixels for said given file type; and

6        processing said data formatted in said new pixel type using  
7 standard image processing routines, said standard routines  
8 designed for data having different components of pixels than said  
9 new pixel type and said given file type.

1        13. A method according to claim 12 further comprising:

2        converting said processed data back into format of said  
3 given file type.

1        14. A method according to claim 13 further comprising:

2        decompressing said image prior to said converting if said  
3 given file type stores component data in a compressed form.

1        15. A method according to claim 13 comprising:

2        compressing said processed data after said converting back  
3 of said processed data into the format of said given file type.

1        16. A method according to claim 12 wherein said new pixel

2 type includes Alpha, Y, Cr and Cb channels, said Alpha channel  
3 extended in range, said Y channel has a value of Black

4 corresponding to zero, all said channels reordered to correspond  
5 closely with said standard routines.

1 17. An article comprising a computer readable medium having  
2 instructions stored thereon which when executed cause:  
3 defining a new pixel type for the purpose of image  
4 processing;  
5 updating codecs to support handling of images formatted in  
6 said new pixel type;  
7 converting an image stored in a given file type into data  
8 formatted in said new pixel type; and  
9 processing said data formatted in said new pixel type using  
10 standard image processing routines, said new pixel type closely  
11 correlated to said given file type, said new pixel type  
12 containing all the components of pixels of said given file type,  
13 said standard routines designed for a color space different than  
14 that of said given file type and said new pixel type.

1 18. An article comprising a computer readable medium having  
2 instructions stored thereon which when executed enable processing  
3 an image of a given file type, said instructions causing:  
4 converting said image into data formatted for a new pixel  
5 type, said new pixel type closely correlated with and having all  
6 the components of pixels for said given file type; and  
7 processing said data formatted in said new pixel type using  
8 standard image processing routines, said standard routines

9 designed for data having different components of pixels than said  
10 new pixel type and said given file type.

1 19. An article according to claim 17 wherein said new pixel  
2 type includes Alpha, Y, Cr and Cb channels, said Alpha channel  
3 extended in range, said Y channel has a value of Black  
4 corresponding to zero, all said channels reordered to correspond  
5 closely with said standard routines.

1 20. An apparatus comprising:  
2 means for defining a new pixel type for the purpose of image  
3 processing;  
4 means for updating codecs to support handling of images  
5 formatted in said new pixel type;  
6 means for converting an image stored in a given file type  
7 into data formatted in said new pixel type; and  
8 means for processing said data formatted in said new pixel  
9 type using standard image processing routines, said new pixel  
10 type closely correlated to said given file type, said new pixel  
11 type containing all the components of pixels of said given file  
12 type, said standard routines designed for a color space different  
13 than that of said given file type and said new pixel type.

1        21. An apparatus enabling processing an image of a given  
2 file type, comprising:

3        means for converting said image into data formatted for a  
4 new pixel type, said new pixel type closely correlated with and  
5 having all the components of pixels for said given file type; and

6        means for processing said data formatted in said new pixel  
7 type using standard image processing routines, said standard  
8 routines designed for data having different components of pixels  
9 than said new pixel type and said given file type.